**IT Applications Unit 3, AOS 1, Online Communities**

1. Complete the following, from pgs, 28- 32: **Transmission media**

**Networks are classified according to below and we will study the following:**

1. Network Categories: LAN, WAN
2. Network Architecture, client-server; peer-to-peer; internet peer-to-peer; intranet
3. Network communication standards
4. Network hardware and software
5. **Transmission media**
6. Network security

**Transmission media**

**Physical Transmission**

**Twisted – pair cable**

1. What is twisted pair cable?

It is eight wires twisted in four separate pairs then twisted into a group.

1. Why do new networks use CAT 5E or CAT 6 rather than CAT 3?

Because CAT 5E uses all four paired wires and CAT 6 has more stringent specifications regarding noise and offers superfast broadband.

1. What are some disadvantages of CAT 5E and why is it used in so many installations?
2. What type of networks is this cable largely used in?

Star networks

**Coaxial Cable**

1. Describe the characteristics of this cable.

This cable only contains two wires. The inner wire is surrounded by insulation, and then by copper braid and sometimes aluminium, tin or lead foil,and finally another layer of protective insulation.

1. What network is it used in?

It is used in bus networks.

**Fibre-optic cable**

1. Describe the characteristics of this cable.

It consists of special glass or plastic strands that can transmit light pulses.

1. Why is fibre-optic cable often used to connect major switches inside buildings as well as between buildings.

Because its cheap but also quick.

1. What are the disadvantages of this cable?

Its disadvantages are its fragile, can be expensive and each strand is only capable of handling one way traffic.

**Wireless Transmission,** p 30

**Radio Waves**

1. What is required for radio transmissions to occur?

A transmitter is required to broadcast the radio signal and a receiver is needed to accept it.

1. Wi-Fi networks use radio waves. What are its advantages over a cable network and what are its disadvantages?

An advantage is that with notebook computers they can be used anywhere within the range of an access point which will then connect them by cable to a network. A disadvantage is it is slower.

1. Describe the characteristics of Bluetooth.

Bluetooth is a standard that uses short range radio waves to transmit data of a distance up to 10 metres.

**Microwaves**

1. Describe the characteristics of microwave transmission.

Microwave transmission requires line-of-sight transmission where there is no obstruction between the receiver dish and the sending dish.

1. What are the limitations of microwave transmission?

It requires line-of-sight transmission.

**Satellite**

1. Satellite transmission can be in what forms?

It can be found in the form of radio waves or microwaves.

1. What are the limitations of this form of transmission?

Its biggest limitations is the distance the waves have to travel to the station and back to the earth station.

1. Who might use this form of transmission?

People who might use this form of transmission are just everyday people.

**Infra-red**

1. Describe the characteristics of infra-red transmission.

This transmission uses the same technology as the TV and video remote controls.

1. Why is radio wireless networking preferable to infra-red wireless networking?

It is preferred because the transfer rate of infra-red wireless is slower.